PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-011734
(43)Date of publication of application : 15.01.2003

(51)Int.Cl. B60R 11/02
B60K 37/00
B60K 37/04

(21)Application number : 2001-350438
(22)Date of filing : 15.11.2001

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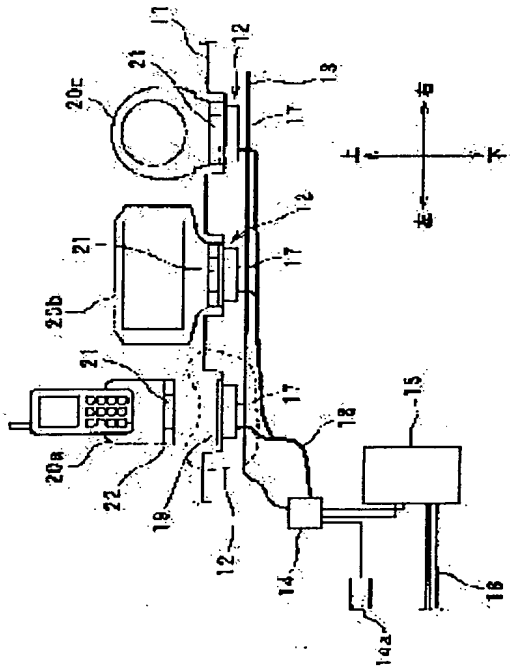
(30)Priority
Priority number : 2001130125 Priority date : 26.04.2001 Priority country : JP

(54) MOUNTING STRUCTURE OF ELECTRICAL APPARATUS FOR VEHICLE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a structure of a mounting part of an electrical apparatus provided on a design member in a cabin enabling a user of a vehicle to easily replace the electrical apparatus.
SOLUTION: Because an antenna 13 on the vehicle side for transmitting first to third electric signals to an accessory mounted on a mounting part 12 is provided on the mounting part 12, all the electric signals required by each of accessories 20a, 20b, 20c are transmitted irrespective of which of the accessories 20a, 20b, 20c is, mounted on the mounting part 12. Thereby, even when either of the plurality of the accessories 20a, 20b, 20c is mounted on the mounting part 12, it is not necessary to provide new electric wiring in the mounting part 12. Therefore, wiring work, which requires high technique and is troublesome work, can be eliminated and a user of the vehicle can easily replace the accessory according to one's preference.



TRANSLATION OF JAPANESE PATENT APPLICATION PUBLICATION NO. 2003-11734 MADE BY AUTOMATIC TRANSLATOR AVAILABLE ON THE JAPAN PATENT OFFICE WEBSIDE

[Claim(s)]

[Claim 1]an indoor member (10) located in the vehicle interior of a room -- two or more electric appliances (20a and 20b.) It has a fitting part (12, 120, 121) to which one electric appliance (20c) arbitrarily selected out of 20c is attached, Said fitting part (12, 120, 121) is equipped with a means of communication (13, 130, 171, 173) which transmits an electrical signal by the side of vehicles to said one selected electric appliance (20c), Electric appliance mounting structure for vehicles including two or more electrical signals for operating each of two or more of said electric appliances (20a, 20b, 20c) in said electrical signal transmitted.

[Claim 2]The electric appliance mounting structure for vehicles according to claim 1 which said indoor member is an instrument board (10) of vehicles, and is characterized by equipping the upper surface of said instrument board (10) with said fitting part (12, 120, 121).

[Claim 3]The electric appliance mounting structure for vehicles according to claim 2, wherein an upper surface portion of said instrument board (10) is formed of a dismountable lid member (11) and said lid member (11) is equipped with said fitting part (12, 120, 121).

[Claim 4]Electric appliance mounting structure for vehicles of any one statement of claim 1 thru/or 3, wherein said fitting part (12, 120, 121) is equipped with a mounting means (19) which can be attached only in 1 operation in said one selected electric appliance (20c).

[Claim 5]Electric appliance mounting structure for vehicles of any one statement of claim 1 thru/or 4 provided with two or more said fitting parts (12, 120, 121).

[Claim 6]In said means of communication (13, 130, 171, 173). A signal transformation machine (14) connected with the vehicles side electric wiring (16) which transmits the vehicles side electrical signal other than said two or more electrical signals is connected, and this signal transformation machine (14), Electric appliance mounting structure for vehicles of any one statement of claim 1 thru/or 4 sorting out said two or more electrical signals from said vehicles side electrical signals, and transmitting to said means of communication (13, 130, 171, 173).

[Claim 7]The electric appliance mounting structure for vehicles according to claim 6 provided with two or more said fitting parts (12, 120, 121).

[Claim 8]The electric appliance mounting structure for vehicles according to claim 7 outputting said two or more electrical signals to said means of communication (13, 130, 171, 173) with which each of two or more of said fitting parts (12, 120, 121) was equipped from said one signal transformation machine (14).

[Claim 9]Said means of communication (13, 130, 171, 173) with which each of two or more of said fitting parts (12, 120, 121) was equipped, The electric appliance mounting structure for vehicles according to claim 7 or 8, wherein communication has become possible at an electric appliance and both directions which were attached to said fitting part (12, 120, 121).

[Claim 10]Electric appliance mounting structure for vehicles of any one statement of claim 1 thru/or 9 carrying out radio of said means of communication (13, 130, 171, 173) by transmitting electromagnetic waves.

[Claim 11]The electric appliance mounting structure for vehicles according to claim 10, wherein said electromagnetic waves are infrared rays.

[Claim 12]Said means of communication is a terminal for the vehicles side communication of a contact process (171, 173), Electric appliance mounting structure for vehicles of any one statement of claim 1 thru/or 9 contacting a terminal for the apparatus side communication (211, 213) which said one selected electric appliance (20c) has, and transmitting.

[Claim 13]Among said terminal for the vehicles side communication (171, 173), and said terminal for the apparatus side communication (211, 213), for one of terminals. An elastic member for

communication terminals which contacts where elastic deformation is carried out to a terminal of another side is provided with it, and said elastic member for communication terminals, The electric appliance mounting structure for vehicles according to claim 12 having pushed said terminal for the apparatus side communication (211, 213) against said terminal for the vehicles side communication (171, 173) according to elastic force.

[Field of the Invention]This invention relates to the mounting structure which attaches the electric appliance which operates based on the electrical signal by the side of vehicles to indoor members, such as a vehicle instrument panel.

[Description of the Prior Art]In the mounting structure to the fitting part with which indoor members of accessories (electric appliance), such as a battery charger for cellular phones which operates based on the electrical signal by the side of vehicles, a display for navigation, and a tachometer, such as an instrument board, were equipped, He was trying to transmit an electrical signal to accessories in the former by equipping a fitting part with the electric wiring which has an electrical signal which accessories need, and connecting this electric wiring to accessories.

[Problem(s) to be Solved by the Invention]However, if it is premised on exchanging in another accessories later not carrying out the accessories once attached in structure conventionally [above-mentioned] and is going to exchange the already attached accessories in another accessories, A fitting part must newly be equipped with the electric wiring for inputting the electrical signal which other accessories need. And since this wiring work is complicated work for ordinary vehicle users while requiring advanced art, it is difficult for a vehicle user to exchange accessories according to liking.

[0004]In the mounting structure which attaches an electric appliance to the fitting part of the car interior of a room, this invention aims to let a vehicle user make it the structure which can renew an electric appliance easily in view of the point describing above.

[Means for Solving the Problem]In order to attain the above-mentioned purpose, in the invention according to claim 1. an indoor member (10) located in the vehicle interior of a room -- two or more electric appliances (20a and 20b.) It has a fitting part (12, 120, 121) to which one electric appliance (20c) arbitrarily selected out of 20c is attached, A fitting part (12, 120, 121) is equipped with a means of communication (13, 130, 171, 173) which transmits an electrical signal by the side of vehicles to one electric appliance (20c), Two or more electrical signals for operating each of two or more electric appliances (20a, 20b, 20c) were included in an electrical signal transmitted.

[0006]thereby -- a fitting part (12, 120, 121) -- which electric appliance (20a.) It will not be concerned with whether 20b and 20c are attached, but all the electrical signals which each electric appliance (20a, 20b, 20c) requires will be transmitted, and an electric appliance attached to a fitting part (12, 120, 121) serves as ability ready for receiving in all the electrical signals.

[0007]Therefore, for example, if an attached electric appliance (20c) sorts out a required electrical signal among two or more electrical signals, it will not be necessary to newly equip a fitting part (12, 120, 121) with electric wiring. Therefore, since wiring work which was complicated work can be abolished while requiring advanced art, a vehicle user can exchange an electric appliance easily according to liking.

[0008]In the invention according to claim 2, a design member is an instrument board (10) of vehicles, and it is characterized by equipping the upper surface of an instrument board (10) with a fitting part (12, 120, 121).

[0009]It can make it easy to support an electric appliance from a lower part by this, and can make it easy to make an electric appliance hold to a fitting part (12, 120, 121). Like [in case electric appliances are meters of a display etc., such as a displaying means and a tachometer,], when especially visibility from a crew member is required of an electric appliance, as an electric appliance is attached to the upper surface of an instrument board (10), it is suitable for it.

[0010]Since it is characterized by forming an upper surface portion of an instrument board (10) of a dismountable lid member (11) in the invention according to claim 3, and equipping a lid member (11)

with a fitting part (12, 120, 121), After vehicles are taken out to a commercial scene, it can perform easily making a fitting part (12, 120, 121) have with an option.

[0011]In the invention according to claim 4, to a fitting part (12, 120, 121). Since it is characterized by having a mounting means (19) which can be attached only in 1 operation in one selected electric appliance (20c), mounting work to a fitting part (12, 120, 121) of an electric appliance can be made easy.

[0012]This invention is not restricted when the number of fitting parts (12, 120, 121) is one, but it may be made to be provided with two or more fitting parts (12, 120, 121) like claim 5 and the invention according to claim 7. Thereby, an electric appliance according to liking can be attached to a fitting part (12, 120, 121) of a position according to liking, and the vehicle interior of a room is made in comfortable space.

[0013]In the invention according to claim 6, to a means of communication (13, 130, 171, 173). A signal transformation machine (14) connected with the vehicles side electric wiring (16) which transmits the vehicles side electrical signal other than said two or more electrical signals is connected, and this signal transformation machine (14), It is characterized by sorting out said two or more electrical signals from the vehicles side electrical signals, and transmitting to a means of communication (13, 130, 171, 173).

[0014]Since only said two or more electrical signals about an operation of an electric appliance (20a, 20b, 20c) can be transmitted to one electric appliance (30c) chosen from a means of communication (13, 130, 171, 173) among the vehicles side electrical signals by this, an electric appliance (30c), It can make it easy to sort out a required electrical signal among two or more electrical signals.

[0015]In the invention according to claim 8, a fitting part (12, 120, 121) Two or more preparations, It is characterized by outputting said two or more electrical signals to a means of communication (13, 130, 171, 173) with which each of two or more fitting parts (12, 120, 121) was equipped from one signal transformation machine (14).

[0016]Reduction of part mark can be aimed at compared with a case where make it correspond to each of two or more means of communication (13, 130, 171, 173), and it has two or more signal transformation machines (14) by this. Installation operation of electric wiring between a signal transformation machine (14) and a means of communication (13, 130, 171, 173) can be simplified. Since what is necessary is just not to be concerned with the number of a fitting part (12, 120, 121), but to have one signal transformation machine (14), a fitting part (12, 120, 121) can be extended easily, it is not based on a type of a car, but electric appliance mounting part structure of this invention can be communalized easily.

[0017]In the invention according to claim 9, a means of communication (13, 130, 171, 173) with which each of two or more fitting parts (12, 120, 121) was equipped is characterized by communication having become possible at an electric appliance and both directions which were attached to a fitting part (12, 120, 121).

[0018]Thereby, when an electric appliance is attached to two or more fitting parts (12, 120, 121), information which one electric appliance has via a signal transformation machine (14) can be made to transmit to an electric appliance of another side.

[0019]In the invention according to claim 10, a means of communication (13, 130, 171, 173) is characterized by carrying out radio by transmitting electromagnetic waves.

[0020]Since wiring connection work which is needed when it is a wire communication using electric wiring can be made unnecessary by this in exchanging an electric appliance, it can be made still easier that a vehicle user exchanges an electric appliance.

[0021]In the invention according to claim 11, since it is characterized by electromagnetic waves being infrared rays, it can control interfering with communication of a means of communication (13, 130, 171, 173) of other vehicles. Even if it is a case where an electric appliance which uses an electric wave of AM radio etc. near the means of communication (13, 130, 171, 173) among vehicles is carried, it can control that electromagnetic waves interfere.

[0022]In the invention according to claim 12, a means of communication is a terminal for the vehicles side communication of a contact process (171, 173), Since it is characterized by contacting a terminal for the apparatus side communication (211, 213) with which an electric appliance attached to a fitting part (12, 120, 121) was equipped, and transmitting, Since fear of interference of the above electromagnetic waves does not arise while being able to plan a cost reduction of a means of communication compared with a case where radio is carried out by electromagnetic waves, it is suitable.
[0023]In the invention according to claim 13, among a terminal for the vehicles side communication (171, 173), and a terminal for the apparatus side communication (211, 213), for one of terminals. An elastic member for communication terminals which contacts where elastic deformation is carried out to a terminal of another side is provided with it, and an elastic member for communication terminals, Since it is characterized by having pushed a terminal for the apparatus side communication (211, 213) against a terminal for the vehicles side communication (171, 173) according to elastic force, a terminal for the vehicles side communication (171, 173) and a terminal for the apparatus side communication (211, 213) can be contacted certainly.
[0024]At the same time it attaches one selected electric appliance (20c) to a fitting part (12, 120, 121) in the invention according to claim 14, Since it is characterized by being connectable with a terminal for the vehicles side communication (171, 173) about a terminal for the apparatus side communication (211, 213), it can be made still easier that a vehicle user exchanges an electric appliance.
[0025]In the invention according to claim 15, a terminal for the apparatus side communication is a plug (211) prolonged cylindrical, and a terminal for the vehicles side communication is characterized by being a jack (171) in which a plug (211) is inserted.
[0026]Since an angle of a hand of cut (the direction of the circumference of an axis of insertion) can be connected by this in inserting a plug (211) in a jack (171) and connecting, without being specified, an electric appliance can be attached to a fitting part (12, 120, 121) at an angle free to said hand of cut.
[0027]If a plug (211) and a jack (171) of structure of 3 pole terminal are applied, an electric power supply to an electric appliance from a battery of vehicles and communication can be performed by a plug (211) and a jack (171) of a lot, and it is suitable. An electric appliance can be made to hold to a fitting part (12, 120, 121) by connection of a plug (211) and a jack (171), and it is suitable.
[0028]In the invention according to claim 16, it is characterized by equipping one electric appliance (20c) chosen as a fitting part (12, 120, 121) with a noncontact type power supply means (17) which supplies electric power by non-contact.
[0029]In exchanging an electric appliance (20c), according to the conventional mounting structure, here. According to the invention given in above-mentioned claim 16, to work which connects electric wiring for power supplies to an electric appliance in connecting to an electric appliance electric wiring for power supplies by the side of vehicles with which electric power of a battery of vehicles is supplied and making electric power supply being needed. Since above-mentioned electric wiring connection work can be made unnecessary, it can be made still easier that a vehicle user exchanges an electric appliance.
[0030]Without being restricted when supplying electric power to an electric appliance from a battery of vehicles, this invention carries a solar cell in an electric appliance, and may be made to make unnecessary an electric power supply from a battery of vehicles, for example.
[0031]In the invention according to claim 17, it is characterized by forming circularly a field which counters an electric appliance attached to a fitting part (12, 120, 121) among noncontact type power supply means (17).
[0032]Since an angle of a hand of cut (the direction of the circumference of an axis of an installation direction) can be attached without being specified when this attaches one selected electric appliance (20c) to a fitting part (12, 120, 121), An electric appliance (20c) can be attached to a fitting part (12, 120, 121) at an angle free to said hand of cut.
[0033]When amount of used electricity of a noncontact type power supply means (17) is more than a

predetermined upper limit amount, and while in a case of being below the predetermined amount of minimums, in the invention according to claim 18 at the time in the case of one [at least]. It is characterized by stopping supply of electric power by a noncontact type power supply means (17).

[0034]Even if a noncontact type power supply means (17) is in a state where an electric appliance is not attached to a fitting part (12, 120, 121), here, For example, when a metal piece (for example, can of can juice) is neglected by fitting part (12, 120, 121), a possibility that a noncontact type power supply means (17) may heat a metal piece arises.

[0035]Then, in an invention given in above-mentioned claim 18, when amount of used electricity is more than a predetermined upper limit amount, and it stops an electric power supply, and amount of used electricity is more than a predetermined upper limit amount, it considers that a metal piece is heated and an electric power supply can be stopped. When amount of used electricity is below the predetermined amount of minimums and it stops an electric power supply, when amount of used electricity is below the predetermined amount of minimums, it can consider that an electric appliance is not attached to a fitting part (12, 120, 121), an electric power supply can be stopped, and energy saving can be attained.

[0036]A fitting part (12, 120, 121) is equipped with a control means (24d) which controls electric energy of electric power supplied according to appropriate voltage of an electric appliance attached to this fitting part (12, 120, 121) in the invention according to claim 19.

[0037]When appropriate voltages of each electric appliance (20a, 20b, 20c) differ by this, even if it is a case where which electric appliance is chosen, an electric power supply to an electric appliance (20c) can be performed by one noncontact type power supply means (17), and it is suitable.

[0038]A recognition signal from one selected electric appliance (20c) is inputted into a control means (24d), and a control means (24d) controls electric energy by the invention according to claim 20 to it based on a recognition signal.

[0039]Thereby, since appropriate voltage can be judged with a recognition signal, control of electric energy can be made easy.

[0040]By the way, when a metal piece (for example, can of can juice) is neglected by fitting part (12, 120, 121), for example, a possibility of a noncontact type power supply means (17) malfunctioning, and heating a metal piece arises. On the other hand, in the invention according to claim 21, since it is characterized by a control means (24d) forbidding supply of electric power when a recognition signal has not been inputted into a control means (24d), the above malfunctions of a noncontact type power supply means (17) can be prevented.

[0041]In the invention according to claim 22, to a fitting part (12, 120, 121). Since it is characterized by having a terminal for vehicles side power sources (170, 171, 172) which contacts a terminal for apparatus side power sources (210, 211, 212) which one selected electric appliance (20c) has, and supplies electric power of a battery of vehicles, Structure for supplying electric power compared with a case where electric power is supplied by a noncontact type power supply means (17) can be made cheap.

[0042]In the invention according to claim 23, among a terminal for vehicles side power sources (170, 171, 172), and a terminal for apparatus side power sources (210, 211, 212), for one of terminals. An elastic member for power supply terminals which contacts where elastic deformation is carried out to a terminal of another side is provided with it, and this elastic member for power supply terminals, Since it is characterized by having pushed a terminal for apparatus side power sources (210, 211, 212) against a terminal for vehicles side power sources (170, 171, 172) according to elastic force, A terminal for apparatus side power sources (210, 211, 212) and a terminal for vehicles side power sources (170, 171, 172) can be contacted certainly.

[0043]At the same time it attaches one selected electric appliance (20c) to a fitting part (12, 120, 121) in the invention according to claim 24, Since it is characterized by being connectable with a terminal for vehicles side power sources (170, 171, 172) about a terminal for apparatus side power sources (210, 211,

212), it can be made still easier that a vehicle user exchanges an electric appliance.

[0044]In the invention according to claim 25, a fitting part (12, 120, 121), One electric appliance (20c) formed and chosen as hole shape caved-in from a design surface of an indoor member (10), It was attached by inserting a part of this electric appliance (20c) in a fitting part (12, 120, 121) of hole shape, and a terminal for apparatus side power sources (210, 211, 212) was annularly formed in a circumference of an axis of the cave-in direction.

[0045]By this, even if it is a case where it attaches to a circumference of an axis of the cave-in direction at what kind of angle in attaching an electric appliance (20c) to a fitting part (12, 120, 121), Since a terminal for apparatus side power sources (210, 211, 212) can be contacted for a terminal for vehicles side power sources (170, 171, 172), an electric appliance (20c) can be attached to a fitting part (12, 120, 121) at an angle free in the direction of the circumference of said axis.

[0046]In the invention according to claim 26, equip a fitting part (12, 120, 121) with a link member (60), and this link member (60), When attaching one selected electric appliance (20c) to a fitting part (12, 120, 121), it is pushed on this electric appliance (20c), and operate, and an operation of a link member (60) is interlocked with, A terminal for vehicles side power sources (170, 171, 172) moves to a position in contact with a terminal for apparatus side power sources (210, 211, 212).

[0047]Thereby, contact of both terminals (170, 171, 210, 211) can be ensured.

[0048]Inside of a casing (24a) of one electric appliance (20c) selected in the invention according to claim 27, A portion equipped with a terminal for apparatus side power sources (210, 211, 212) is formed in a predetermined convex configuration, By forming in concave shape corresponding to a convex configuration a portion equipped with a terminal for vehicles side power sources (170, 171, 172) among fitting parts (12, 120, 121), and inserting a portion (24b) of a convex configuration in a portion (120b) of concave shape, A terminal for apparatus side power sources (210, 211, 212) is positioned for a terminal for vehicles side power sources (170, 171, 172). A guidance guide (120c) which shows a portion which adjoins a portion (120b) of concave shape among fitting parts (12, 120, 121) to an insert lump of a portion (24b) of a convex configuration was provided.

[0049]In this attaching an electric appliance (20c) to a fitting part (12, 120, 121), Since a portion (24b) of a convex configuration of an electric appliance (20c) is guided by a guidance guide (120c) to a portion (120b) of concave shape of a fitting part (12, 120, 121), it can make it easy to insert an electric appliance in a fitting part (12, 120, 121), and to attach it.

[0050]A fitting part (12, 120, 121) is equipped with a control means (24d) which controls electric energy of electric power supplied according to appropriate voltage of one selected electric appliance (20c) in the invention according to claim 28.

[0051]By this, even if it is a case where appropriate voltages of two or more electric appliances (20a, 20b, 20c) differ, respectively, An electric power supply to an electric appliance (20c) can be performed via each terminal for apparatus side power sources (210, 211, 212) from the same terminal for vehicles side power sources (170, 171, 172), and it is suitable.

[0052]A recognition signal from one selected electric appliance (20c) is inputted into a control means (24d), and a control means (24d) controls by the invention according to claim 29 to it based on a recognition signal.

[0053]Thereby, since appropriate voltage can be judged with a recognition signal, control of electric energy can be made easy.

[0054]In the invention according to claim 30, when a recognition signal has not been inputted into a control means (24d), a control means (24d) forbids supply of electric power.

[0055]Thereby, a terminal for vehicles side power sources (170, 171, 172) can be beforehand prevented from short-circuiting by a metal piece (for example, can of can juice).

[0056]A recognition signal is inputted into said control means (24d) by energization with a terminal for vehicles side power sources (170, 171, 172), and a terminal for apparatus side power sources (210, 211,

212) in the invention according to claim 31.
[0057]Thereby, since a recognition signal can be inputted into a control means (24d) using a terminal for power supplies (170, 171, 210, 211), a communication wire for exclusive use for transmitting a recognition signal can be made unnecessary.
[0058]On the other hand, like the invention according to claim 32, to a fitting part (12, 120, 121). It may be made to have vehicles side input terminal with an another terminal for vehicles side power sources (170, 171, 172) which contacts the apparatus side output terminal which one selected electric appliance (20c) has, and communicates a recognition signal.
[0059]In the invention according to claim 33, while one selected electric appliance (20c) and engagement are possible, a fitting part (12, 120, 121) is equipped with the movable fitting part side engaging member (42) so that this engagement may be canceled.
[0060]An electric appliance (20c) can be prevented from separating from a fitting part (12, 120, 121) in the midst of using an electric appliance (20c) for a fitting part (12, 120, 121) by this, attaching it, if the fitting part side engaging member (42) is made engaged.
[0061]In the invention according to claim 34, it is operated by crew member, and has an engagement release operation switch (SW1) which outputs an engagement release signal of which engagement of the fitting part side engaging member (42) is canceled, and the fitting part side engaging member (42) is characterized by a movable thing based on an engagement release signal.
[0062]Since the fitting part side engaging member (42) is engaged by this unless an engagement release operation switch (SW1) is operated by crew member, engagement of the fitting part side engaging member (42) can be ensured.
[0063]In the invention according to claim 35, the fitting part side engaging member (42) is operated as an anti-theft means of one electric appliance (20c) with selected engagement to a fitting part (12, 120, 121). For example, it is suitable as **** of the fitting part side engaging member (42) is forbidden like the invention according to claim 36 according to at least one state among an operating state of an antitheft device carried in vehicles, and an energization condition by the side of vehicles.
[0064]A case where the antitheft device carried in vehicles is operating as an example in a case of forbidding engagement release of the fitting part side engaging member (42), a case where an accessory switch of vehicles is in a state of OFF, a case where an ignition switch of vehicles is in a state of OFF, etc. are mentioned.
[0065]Like the invention according to claim 37 to trying to equip the fitting part side with an engaging member in an invention given in above-mentioned claims 33 thru/or 36, It may have an engagement part (11b) which engages with the electric appliance side engaging member (80) with which one electric appliance (20c) chosen as an indoor member (10) was equipped, and the electric appliance side engaging member (80) may be made movable so that this engagement may be canceled.
[0066]By the way, in the state where an electric appliance (20c) is not attached to a fitting part (12, 120, 121), if a fitting part (12, 120, 121) is exposed, a fine sight of an indoor member (10) will be spoiled. On the other hand, in the invention according to claim 38 to an indoor member (10). A fitting part (12, 120, 121) is covered, it has a design lid (30) which forms a design surface with an indoor member (10), and a design lid (30) is characterized by a thing movable so that a fitting part (12, 120, 121) may be opened and closed.
[0067]Thereby, a fine sight of an indoor member (10) in the state where an electric appliance (20c) is not attached to a fitting part (12, 120, 121) can be improved.
[0068]In the invention according to claim 39, a fitting part (12, 120, 121), One electric appliance (20c) formed and chosen as hole shape caved-in from a design surface of an indoor member (10), By inserting a part of this electric appliance (20c) in a fitting part (12, 120, 121) of hole shape, it is attached and a design lid (30), A fitting part (12, 120, 121) is opened by being pushed against an electric appliance inserted in and carrying out parallel translation towards a cave-in.

[0069]In this attaching an electric appliance (20c) to a fitting part (12, 120, 121), Since operation which opens a design lid (30) other than operation which attaches an electric appliance (20c) is not needed but a design lid (30) can be opened simultaneously with attaching operation, attachment of an electric appliance (20c) can be made easy.

[0070]By providing an attaching part (30a) held rotatable at an indoor member (10) in a design lid (30), and on the other hand, making it rotate this attaching part (30a) like the invention according to claim 40, It may be made for a design lid (30) to open and close a fitting part (12, 120, 121), and in this case, an electric appliance will be attached to a fitting part (12, 120, 121), after opening a design lid (30).

[0071]In the invention according to claim 41, a design lid (30), one electric appliance (20c) chosen with a fitting part (12, 120, 121) -- a wrap -- it being like and, Among an operating state of an antitheft device carried in vehicles, and an energization condition by the side of vehicles, according to at least one state, after a design lid (30) has covered an electric appliance (20c), **** is forbidden.

[0072]Thereby, a design lid (30) can be operated as an anti-theft means of an electric appliance (20c).

[0073]Since it is characterized by enabling attachment of one selected electric appliance (20c) to a fitting part (12, 120, 121) at arbitrary angles of a circumference of a predetermined axis in the invention according to claim 42, An electric appliance can be attached to a fitting part (12, 120, 121) by direction according to a crew member's liking.

[0074]In the invention according to claim 43, a fitting part (12, 120, 121), Since it is characterized by being rotatable with one selected electric appliance (20c) at a circumference of a predetermined axis, an electric appliance can be located in direction according to a crew member's liking by rotating a fitting part (12, 120, 121).

[0075]It is suitable if an axis prolonged in the perpendicular direction is set as a predetermined axis like the invention according to claim 44.

[0076]An invention given in above-mentioned claim 1 24, 26 and 28 thru/or 33, 35, 36, 38 to 44 here, An electric appliance (20a, 20b, 20c) to not containing in a component of an invention the invention according to claim 45, Besides a fitting part (12, 120, 121) of claim 1 24, 26 and 28 thru/or 33, 35 and 36, and any one statement of 38 thru/or 44, and a means of communication (13, 130, 171, 173), It is considered as a component of an invention of at least one electric appliance in two or more electric appliances (20a, 20b, 20c).

[0077]Numerals in a parenthesis of each above-mentioned means are examples which show a correspondence relation with a concrete means of a statement to an embodiment mentioned later.

[0078]

[Embodiment of the Invention]Hereafter, this invention is explained based on the embodiment shown in a figure.

[0079](A 1st embodiment) This embodiment has applied the mounting structure of this invention to attachment with the fitting part and electric appliance with which the instrument board (indoor member) of vehicles was equipped. Drawing 1 is a perspective view of the instrument board in this embodiment, and drawing 2 is a whole system chart. The arrow in drawing 1 and drawing 2 shows the upper and lower sides and those on either side for all directions before and after a vehicles mount condition.

[0080]As shown in drawing 1, the upper surface portion of the instrument board 10 is formed of the dismountable lid member 11, and this lid member 11 is equipped with two or more fitting parts 12 along with the vehicle longitudinal direction. The number of the fitting parts 12 of this embodiment is three. And as shown in drawing 2, the accessories (electric appliance) 20a, 20b, and 20c which operate based on the electrical signal by the side of vehicles are attached to each of these fitting parts 12. These accessories 20a, 20b, and 20c are equivalent to an electric appliance given in a claim.

[0081]The accessories of this embodiment shown in drawing 2 sequentially from the left The charging means 20a, It is the displaying means 20b and the meter (for example, tachometer which displays an engine speed value) 20c, and to the charging means 20a, the 1st electrical signal, such as an audio signal

from the microphone for handsfree, is transmitted among the electrical signals by the side of vehicles, and it operates to it based on this 1st electrical signal.

[0082]As an example of the charging means 20a, the battery charger for cellular phones with a handsfree function, etc. are mentioned. The display for navigation, etc. are mentioned as an example of the displaying means 20b. The tachometer etc. which display an engine speed value are mentioned as an example of the meter 20c.

[0083]The 2nd electrical signal, such as navigation information from the navigation system which was installed in the center cluster part 10a of the instrument board 10 and which is not illustrated, is transmitted to the displaying means 20b, and it operates based on this 2nd electrical signal. The 3rd electrical signal, such as an engine speed signal from engine ECU which is not illustrated, is transmitted to the meter 20c, and it operates based on this 3rd electrical signal.

[0084]It has the vehicles side antenna 13 which is prolonged in the inner part of the instrument board 10 among the fitting parts 12 in a vehicle longitudinal direction, and transmits and receives a signal, and radio has become possible at the apparatus side antenna and both directions which were built in each accessories 20a, 20b, and 20c and which are not illustrated. And for example, the vehicles side antenna 13 of this embodiment has little influence on AM radio etc., he is trying to communicate using the electric wave of frequency bands, such as FM. The vehicles side antenna 13 corresponds to a means of communication given in a claim.

[0085]And the vehicles side antenna 13 is connected to the signal transformation machine 14 arranged inside the instrument board 10, and the signal transformation machine 14 is connected to the electric distribution boxes 15, such as a junction box. This junction box 15 is a thing of the common knowledge which is connected to the wire harness 16 as an integrated electric wiring bunch cabled from each part of vehicles, and performs electric distribution, For example, distribution of the electrical signal between the electric circuit part of 20 copies of instrument boards of the car interior of a room and the electric circuit part by the side of a vehicle indoor backseat etc., distribution of current supply, etc. are performed between the electric circuit part of 20 copies of instrument boards of the car interior of a room, and the electric circuit part by the side of the vehicle indoor body between the electric circuit part in an engine room, and the electric circuit part of the car interior of a room.

[0086]And from each accessories 20a, 20b, and 20c, at the time of the power supply ON, the code signal is always transmitted, and the signal transformation machine 14 recognizes that the electrical signals which each accessories 20a, 20b, and 20c need are the 1st - the 3rd electrical signal with this code signal. And the signal transformation machine 14 sorts out the 1st - the 3rd electrical signal from the vehicles side electrical signals of two or more kinds which the junction box 15 has, and transmits the 1st sorted out - the 3rd electrical signal to the vehicles side antenna 13.

[0087]The signal transformation machine 14 multiplexed the 1st - the 3rd electrical signal, changed them into the multiple signal, and has transmitted this multiple signal to the vehicles side antenna 13. And the accessories which received the multiple signal from the vehicles side antenna 13 with the apparatus side antenna sort out the electrical signal which self needs from multiple signals, and are used. For example, the tachometer 20c sorts out the 3rd electrical signal from multiple signals, and operates based on this 3rd electrical signal.

[0088]Although the case where he wants to make the various sensors 14a, such as a gyroscope of a navigation system, added depending on the accessories attached, for example arises, In such a case, what is necessary is to connect the sensor 14a to the signal transformation machine 14, and just to make a sensor signal transmit to the vehicles side antenna 13 with the 1st - the 3rd electrical signal.

[0089]Next, the current supply from the fitting part 21 of the accessories 20a, 20b, and 20c is explained using drawing 3. Drawing 3 is a sectional view showing the state where the accessories 20c were attached to the fitting part 12. Although not illustrated by drawing 3, even if it is which accessories 20a, 20b, and 20c, the mounting structure with the fitting part 12 is the same as the structure shown in

drawing 3.

[0090]Each of each fitting part 12 is equipped with the non-contact power transmission part 17 as a noncontact type power supply means, and the non-contact power transmission part 17 has the primary side coil 17a. This primary side coil 17a is inserted in the circular opening 11a which carries out an opening to the lid member 11. On the other hand, each of each accessories 20a, 20b, and 20c is equipped with the non-contact receiving part 21, and the secondary coil 21a with which the non-contact receiving part 21 was equipped is exposed on the undersurface of the accessories 20a, 20b, and 20c.

[0091]These primary side coils 17a and secondary coils 21a are formed in the discoid centering on the installation direction (the direction of arrow A of drawing 4 (b)) of the accessories 20c, and both the coils 17a and 21a are arranged so that it may be mutually parallel and may approach. The non-contact power transmission part 17 is connected with the battery (not shown) carried in vehicles by the wire harness 18 for power supplies.

[0092]And if the DC electricity from a battery is transmitted to the non-contact power transmission part 17, DC electricity will be changed into the exchange electrical and electric equipment of high frequency by the non-contact power transmission part 17, and the above-mentioned exchange electrical and electric equipment will be sent through the primary side coil 17a with which the non-contact power transmission part 17 was equipped. Then, the exchange electrical and electric equipment will flow into the secondary coil 21a with which the non-contact receiving part 21 was equipped by the principle of well-known electromagnetic induction, and the electrical and electric equipment will be supplied to the non-contact receiving part 21 by non-contact from the non-contact power transmission part 17.

[0093]In order to perform efficiently power transmission of the electric power by electromagnetic induction, and electricity-receiving, it is desirable for the crevice between the primary side coil 17a and the secondary coil 21a to be 2-3 mm or less.

[0094]The electric circuit part of the non-contact power transmission part 17 is equipped with the power consumption detection means which is not illustrated. And when amount of used electricity is more than a predetermined upper limit amount, for example, it was accidentally placed by the fitting part 12, metal pieces, such as a can of can juice, judge it as the time of the abnormalities currently heated by the non-contact power transmission part 17, and stop an electric power supply. When amount of used electricity is below the predetermined amount of minimums, it judges that the accessories 20c are not attached to the fitting part 12, an electric power supply is stopped, and energy saving is attained.

[0095]Next, the attachment to the fitting part 21 of the accessories 20a, 20b, and 20c is explained using drawing 3 and drawing 4. Drawing 4 (a) is a perspective view showing the state where the accessories 20c were removed from the fitting part 21, and drawing 4 (b) is a perspective view explaining the flexibility for attachment of the accessories 20c.

[0096]The portion which is equivalent to the fitting part 12 among the lid members 11 is formed in circular concave shape, and Velcro 19 made from textiles as a mounting means (registered trademark) is stuck on the upper surface of this circular recess by adhesives. The primary side coil 17a inserted in the opening 11a of the lid member 11 is covered on Velcro 19, and it is surface fastener ****. Thereby, even if it is in the state where the accessories 20c were removed, it can prevent the primary side coil 17a being exposed to the vehicle interior of a room, and the fine sight of the design surface of the instrument board 10 can be secured.

[0097]On the other hand, the portion which counters the fitting part 12 among the accessories 20c is formed in the circular convex configuration, and Velcro 22 made of resin as a mounting means of doughnut shape is stuck on the circumference of the secondary coil 21a exposed to the undersurface of these circular heights by adhesives. Here, if the secondary coil 21a is covered on Velcro 22 made of resin, it will become difficult for the crevice between the primary side coil 17a and the secondary coil 21a to be 3 mm or less. On the other hand, in this embodiment, since the secondary coil 21a is exposed, it is easily possible for the crevice between both the coils 17a and 21a to be 3 mm or less.

[0098]Here, if the member of a magnetic body is used as the mounting means 19, a magnetic body will be heated by the electromagnetic induction of the primary side coil 17a. On the other hand, it is suitable, without being heated as mentioned above, since Velcro 19 and 22 which is a nonmagnetic material in this embodiment is used.

[0099]When the circular heights of the accessories 20c are forced on the circular recess of the fitting part 12, Velcro 22 made of resin will be fixed to fibrous Velcro 19 in the direction shown in the arrow A of drawing 4 (b), and the accessories 20c will be fixed to it by the fitting part 12. Since the accessories 20c side is formed in a circular convex configuration and the fitting part 12 side is formed in circular concave shape, positioning of the accessories 20c can be ensured in the case of the work forced as mentioned above.

[0100]Since the fitting part 12 is equipped with the vehicles side antenna 13 which transmits the 1st - the 3rd electrical signal to the accessories attached by the fitting part 12 in this embodiment as explained above, It will not be concerned with whether which accessories 20a, 20b, and 20c are attached to the fitting part 12, but all the electrical signals which each accessories 20a, 20b, and 20c require will be transmitted. Therefore, even if it is a case where any of two or more accessories 20a, 20b, and 20c are attached to the fitting part 12, it will not be necessary to newly equip the fitting part 12 with electric wiring. Therefore, since the wiring work which was complicated work can be abolished while requiring advanced art, a vehicle user can exchange accessories easily according to liking.

[0101]Since the upper surface portion of the instrument board 10 is formed of the dismountable lid member 11 and the lid member 11 is equipped with the fitting part 12, after vehicles are taken out to a commercial scene, it can perform easily making the fitting part 12 have with an option.

[0102]Since the 1st - the 3rd electrical signal transmission in accessories, and current supply are realizable by radio, the cordless making of between accessories and the fitting parts 12 can be carried out, and it can be made still easier that a vehicle user exchanges accessories. In carrying out electric combination with a terminal which is later mentioned by a 3rd and 4th embodiment, there is a possibility that the connection section of a terminal may be damaged, but since it can do cordless, there is no fear of the above-mentioned damage at this embodiment.

[0103]Since accessories and the fitting part 12 are attached on Velcro 19 and 22, accessories can be attached only in 1 operation and it can be made still easier that a vehicle user exchanges accessories.

[0104]By the way, since a hole will be made in the instrument board 10 when making accessories hold to the fitting part 12 using a screw etc., when accessories are removed, the backfilling work of a hole will be needed. On the other hand, according to this embodiment, since it is made to hold on Velcro 19 and 22, the backfilling work of the above-mentioned hole becomes unnecessary, and it can be made still easier that a vehicle user exchanges accessories. Since a hole does not remain in the instrument board 10, deterioration of commodity value can be controlled in the secondhand market of vehicles.

[0105]In this embodiment, have the signal transformation machine 14 and with this signal transformation machine 14. Since the 1st - the 3rd electrical signal were sorted out from the vehicles side electrical signals of two or more kinds and the 1st sorted out - the 3rd electrical signal are transmitted to accessories from the vehicles side antenna 13, accessories can make it easy to sort out a required electrical signal among the 1st - the 3rd electrical signal.

[0106]Since the primary side coil 17a and the secondary coil 21a are formed disc-like, Since the angle of the hand of cut (the direction of the circumference of an axis of the installation direction A) shown in the arrow B of drawing 4 (b) can be attached in attaching accessories to the fitting part 12, without being specified, accessories can be attached to the fitting part 12 at an angle free to said hand of cut.

[0107]Since communication of the vehicles side antenna 13 is attained at each accessories 20a, 20b, and 20c and both directions, it can make the information which one accessories 20a20c has via the signal transformation machine 14 transmit to the accessories 20b of another side. For example, the incoming information of the cellular phone which the battery charger 20a for cellular phones with a handsfree

function has can be displayed on the display 20b for navigation. The information on the engine speed value which the tachometer 20c has can be displayed on the display 20b for navigation.

[0108](A 2nd embodiment) Although he was trying to transmit an electrical signal to accessories by the electric wave of the frequency band of FM in a 1st embodiment of the above using the vehicles side antenna 13 which communicates with the apparatus side antenna as a means of communication, He is trying to transmit an electrical signal to accessories with infrared rays in this embodiment, using the infrared ray transmission section 130 as a means of communication.

[0109]Drawing 5 is a perspective view showing the fitting part 12 and the accessories 20c of this embodiment, and drawing 6 is a sectional view showing the state where the accessories 20c were attached to the fitting part 12. As shown in these drawing 5 and drawing 6, the infrared ray transmission section 130 is arranged at the center of the primary side coil 17a of the non-contact power transmission part 17, and radio has become possible at the infrared receive section 23 and both directions which were built in each accessories 20a, 20b, and 20c. In this embodiment, the primary side coil 17a and the secondary coil 21a are used as a doughnut shape, and it is arranged so that the infrared ray transmission section 130 and the infrared receive section 23 may penetrate at the center of these coils 17a and 21a.

[0110]Here, since it communicates with infrared rays by this embodiment to there being a possibility of interfering with the electromagnetic waves of the means of communication 13 of other vehicles in communicating by an electric wave, it can control interfering with communication of the means of communication 13 of other vehicles.

[0111]Since he is trying to output the 1st - the 3rd electrical signal to the infrared ray transmission section 130 arranged at each of each fitting part 12 from the one signal transformation machine 14 in this embodiment, Reduction of part mark can be aimed at compared with the case where each of each infrared ray transmission section 130 is equipped with the signal transformation machine 14. The installation operation of the electric wiring between the signal transformation machine 14 and each infrared ray transmission section 130 can be simplified. Since what is necessary is just not to be concerned with the number of the fitting part 12, but to have the one signal transformation machine 14, the fitting part 12 can be extended easily, it is not based on a type of a car, but the electric appliance mounting part structure of this invention can be communalized easily.

[0112](A 3rd embodiment) Although electric power is supplied to the accessories 20c from the battery of vehicles by non-contact by the non-contact power transmission part 17 at a 1st and 2nd embodiment of the above, According to this embodiment, the fitting part 12 is equipped with the terminal 170 for vehicles side power sources of a contact process, and electric power is supplied to the accessories 20c from the battery of vehicles by contacting this terminal 170 for vehicles side power sources for the terminal 210 for apparatus side power sources with which the accessories 20c were equipped.

[0113]Drawing 7 is a perspective view showing the fitting part 12 and the accessories 20c of this embodiment, equipped the inner skin of the circular recess of the fitting part 12 with the tabular terminal 170 for vehicles side power sources, and equips the peripheral face of the circular heights of the accessories 20c with the terminal 210 for apparatus side power sources of spring shape. Two poles of the anode and the negative pole are required for each terminals 170 and 210, and the anode terminal and cathode terminal of the terminal 210 for apparatus side power sources are arranged at the position which counters the diameter direction of circular heights.

[0114]According to this embodiment, structure for supplying electric power compared with the case where an electric power supply is carried out according to non-contact can be made cheap.

[0115]Since the terminal 210 for apparatus side power sources is a spring terminal of common knowledge of the spring shape as an elastic member for communication terminals, when making the terminal 210 for apparatus side power sources desorb from the terminal 170 for vehicles side power sources, it can prevent damage to both the terminals 210 and 170. Since the spring terminal 210 is pushed against the terminal 170 for vehicles side power sources according to the elastic force of the

spring terminal 210, the terminal 170 for vehicles side power sources and the spring terminal 210 can be contacted certainly.

[0116]The terminal 170 for vehicles side power sources and the terminal 210 for apparatus side power sources, It is possible to connect both the terminals 210 and 170, and it can be made still easier that a vehicle user exchanges accessories at the same time it attaches the accessories 20c to the fitting part 12, since it prepares for the inner skin of a circular recess, and the peripheral face of circular heights, respectively.

[0117]In 1st and 2nd embodiments, it hits attaching accessories to the fitting part 12, Since the angle of the hand of cut (the direction of the circumference of an axis of the installation direction A) shown in the arrow B of drawing 4 (b) is a structure connected with the terminal of two poles by this embodiment to the ability to attach without being specified, the attachment flexibility of a hand of cut is restricted to a little less than 180 degrees.

[0118](A 4th embodiment) The means of communication of the above 1st - a 3rd embodiment to being what transmits an electrical signal to the accessories 20c by radio in this embodiment. It has the jack 171 by which the plug 211 which the accessories 20c have is inserted in the fitting part 12, and an electrical signal is transmitted to the accessories 20c by inserting the plug 211 in the jack 171. The plug 211 and the jack 171 of this embodiment use the thing of well-known 3 pole terminal. As an example of this 3 pole terminal, a stereo jack and a stereo plug of phi3.5mm are mentioned, for example.

[0119]The plug 211 corresponds to the terminal for the apparatus side communication and the terminal for power supplies given in a claim, and the jack 171 corresponds to the terminal for the vehicles side communication and the terminal for power supplies of a statement at a claim.

[0120]Drawing 8 is a perspective view showing the fitting part 12 and the accessories 20c of this embodiment, equipped the center section of the circular recess of the fitting part 12 with the jack 171, and is provided with the plug 211 prolonged cylindrical in the center section of the circular heights of the accessories 20c. The numerals 211a and 171a show the cathode terminal for power supplies, the numerals 211b and 171b show the anode terminal for power supplies, and the numerals 211c and 171c show the terminal for communication.

[0121]Also in this embodiment, like 1st and 2nd embodiments, with the code signal from each accessories 20a, 20b, and 20c. The signal transformation machine 14 recognizes that the electrical signals which each accessories 20a, 20b, and 20c need are the 1st - the 3rd electrical signal, The signal transformation machine 14 sorts out the 1st - the 3rd electrical signal from the vehicles side electrical signals of two or more kinds, multiplexes the 1st sorted out - the 3rd electrical signal, and transmits to the jack 171. And accessories sort out the electrical signal which self needs from multiple signals, and are used.

[0122]Since fear of interference of the electromagnetic waves mentioned above does not arise while being able to plan the cost reduction of a means of communication compared with the case where radio is carried out by electromagnetic waves according to this embodiment, it is suitable.

[0123]Since it has an elastic member which generally contacts the jack 171 side where elastic deformation is carried out to the plug 211 and which is not illustrated and the plug 211 is forced on the jack 171 according to the elastic force of this elastic member, The plug 211 and the jack 171 can be contacted certainly, and the elastic member is functioning as a slip off stop of the plug 211.

[0124]The accessories 20c can be made to hold to the fitting part 12 by connection between the plug 211 and the jack 171. And since maintenance of the accessories 20c, connection for the electric power supply to the accessories 20c, and connection for communication can be simultaneously made only by inserting the plug 211 in the jack 171, it can be made still easier that a vehicle user exchanges accessories.

[0125]Since the center section of a circular recess and circular heights is equipped with the plug 211 and the jack 171 and a plug is cylindrical shape, Since the angle of the hand of cut (the direction of the circumference of an axis of the installation direction A) shown in the arrow B of drawing 4 (b) can be

attached without being specified, accessories can be attached to the fitting part 12 at an angle free to said hand of cut.

[0126](A 5th embodiment) Drawing 9 is the side of the accessories 20c and the section of the fitting part 12 concerning this embodiment a shown mimetic diagram, and the accessories 20c, It comprises the charging equipment 25 which is charged by the battery charger 24 and the battery charger 24, and operates, and desorption of the charging equipment 25 is attained to the battery charger 24. And the **** part 24b prolonged toward the fitting part 12 from the bottom is prepared for the casing 24a of the battery charger 24.

[0127]This **** part 24 is formed in the predetermined convex configuration shown in drawing 10 and drawing 9 which are C view figures of the accessories 20c, and in the projecting end part of the **** part 24. It has so that the terminal 212 for apparatus side power sources of two poles, the terminal 213 for the apparatus side communication of one pole, and the terminal 214 for engagement release signals of one pole may be exposed.

[0128]On the other hand, the fitting part 120 in this embodiment is an approximate circle pilaster-like plinth, and is being fixed in the inside of the lid member 11. And the hole 120a caved-in from the design surface of the lid member 11 is formed in the upper part of the plinth 120, and this hole 120a is exposed to the opening 11b empty vehicle interior of a room of the lid member 11.

[0129]And it prepares for this plinth 120 so that the terminal 172 for vehicles side power sources of two poles corresponding to each terminals 212, 213, and 214 by the side of the above-mentioned apparatus, the terminal 173 for the vehicles side communication of one pole, and the terminal 174 for engagement release signals of one pole may be exposed in the hole 120a. As shown in drawing 11 and drawing 9 which are D view figures of the fitting part 12, the portion 120b equipped with each terminals 172, 173, and 174 of these among the holes 120a is formed in the concave shape corresponding to the convex configuration of the **** part 24.

[0130]The lid member 11 is equipped with the design lid 30 which opens and closes the opening 11b. If the opening 11b is shut with this design lid 30, while the plinth 120 will be covered by the design lid 30, the design lid 30 forms the design surface of the lid member 11. And by rotating this attaching part 30a, the design lid 30 moves in the direction shown in the arrow E, and the opening 11b is opened [the attaching part 30a held rotatable is formed in the axis of rotation 11c with which the lid member 11 was equipped, and] on the design lid 30, and closed.

[0131]If the design lid 30 is pushed up by the elastic member which is not illustrated, and the accessories 20c are turned to the plinth 120 and pushed from the upper part of the design lid 30, the design lid 30 will move caudad against the elastic force of an elastic member, and it will open the opening 11b. And if the accessories 20c are further pushed towards the concave shape portion 120b as shown in the arrow F, The convex configuration portion 24b of the accessories 20c is inserted in the concave shape portion 120b, and each terminals 212, 213, and 214 by the side of apparatus contact each terminals 172, 173, and 174 by the side of vehicles.

[0132]The guidance guide 120c to which it shows an insert lump of the portion 24b of the convex configuration of the accessories 20c is formed in the portion which adjoins the portion 120b of concave shape among the plinths 120. Therefore, since the portion 24b of a convex configuration is guided by the guidance guide 120c to the portion 120b of concave shape in attaching the accessories 20c to the plinth 120, it can make it easy to insert the accessories 20c in the plinth 120, and to attach them.

[0133]Here, the plinth 120 is equipped with the electrical actuator 40, and this actuator 40 is provided with the operation member 42 as a fitting part side engaging member which operates by energization to the solenoid 41 and the solenoid 41. The operation member 42 of this embodiment is formed in pin geometry, and reciprocates the engagement position projected in the hole 120a of the plinth 120 as shown in the solid line of drawing 9, and the engagement releasing position evacuated from the hole 120a as shown in a dashed dotted line.

[0134]And the actuator 40 will move the operation member 42 to an engagement position, if an insert lump of the accessories 20c is detected. Then, the operation member 42 is inserted in the engaging hole 24c formed in the convex configuration portion 24b of the accessories 20c, and is engaged. And it can prevent the accessories 20c escaping from the plinth 120, and coming out also in the case where the case where vehicle vibration is large, and vehicles collide etc., by this engagement.

[0135]The accessories 20c are equipped with engagement release operation switch SW1, and if closing operation of this switch SW1 is carried out, the engagement release signal of which engagement of the operation member 42 is canceled will be outputted to 24 d of the below-mentioned control circuits with which the battery charger 24 was equipped. Then, 24 d of control circuits control the operation of the actuator 40 for the operation member 42 to move caudad and to cancel engagement. And if engagement does not cancel the accessories 20c, they cannot be removed from the plinth 120.

[0136]Here, when fulfilling predetermined conditions, it may be made for 24 d of control circuits to cancel engagement in addition to the engagement release signal from switch SW1, and thereby, they can operate the operation member 42 as an anti-theft means of the accessories 20c. When the antitheft devices, such as an immobilizer carried in vehicles, do not operate as an example of this predetermined condition, the case where the accessory switch of vehicles is in the state of OFF, the case where the ignition switch of vehicles is in the state of OFF, etc. are mentioned.

[0137]Next, the charging system to the charging equipment 25 of the accessories 20c is explained.

[0138]Drawing 12 is a block diagram showing the composition of this charging system, and drawing 13 is a timing chart figure explaining the operation of the battery charger 24 and the charging equipment 25.

[0139]Vehicles are equipped with the power transmission side control circuit 50 connected by intervening between each terminals 172, 173, and 174 by the side of vehicles, and a vehicles side power source. And the accessories 20c are attached to the plinth 120 as mentioned above, If electric power switch SW2 is supplied by the crew member as connection of each terminals 172, 173, and 174 by the side of the vehicles to each terminals 212, 213, and 214 by the side of apparatus is detected by the power transmission side control circuit 50 and it is shown in ** of drawing 13, By the operation of 24d of control circuits and the charging control circuit 24e with which the battery charger 24 was equipped, as shown in ** of drawing 13, fixed time energization is carried out at the charging equipment 25.

[0140]Then, the rechargeable battery 25a is charged using this energization electric power, and as shown in ** of drawing 13, it transmits that they are accessories which self can charge with the code signal as a recognition signal to 24 d of control circuits as a control means. The two-way communication using the terminals 172 and 212 for power supplies performs transmission of this code signal.

[0141]Then, the charging equipment 25 judges which type of accessories they are from the code signal, and, as for the battery charger 24, 24 d of control circuits control the operation of the charging control circuit 24e by the charging program by which setting out of switching frequency and setting out of a duty ratio which suit it were made. And by the operation of the charging control circuit 24e by these setting out that suited, as shown in ** of drawing 13, the charge to the rechargeable battery 25a is started.

[0142]And after this charge is completed, the electric power supply to the charging control circuit 24e is intercepted so that a surcharge may be avoided. Whether charge was completed or not judges whether the value of the charging current to the charging equipment 25 is below a predetermined value.

[0143]Thus, since 24 d of control circuits can distinguish the charging system etc. of the attached accessories with a code signal according to this embodiment, For example, even if it is a case where the accessories in which standards completely differ are attached when the charging equipment 25 does not support the battery charger 24, since the battery charger 24 forbids power transmission unless a predetermined code signal is received, it can prevent malfunction.

[0144]In the above-mentioned charging program, the reinforcement charge of the rechargeable battery

25a by intermittent energization and the boost charge by continuous energization are appropriately switched according to a code signal. The accessories 20c are equipped with charging mode configuration switch SW3, and if closing operation of this switch SW3 is carried out, setting out of an intermission and continuous energization, setting out of above-mentioned switching frequency, setting out of a duty ratio, etc. can be changed. Therefore, a crew member can choose a charging system if needed by operation of this switch SW3.

[0145]It may be made to make the plinth 120 in this embodiment hold rotatable to the circumference of the axis prolonged in the perpendicular direction to the lid member 11. Thereby, the accessories 20c can be rotated with the plinth 120, and the accessories 20c can be located in the direction according to a crew member's liking.

[0146](A 6th embodiment) Drawing 14 is a block diagram showing the composition of the charging system concerning this embodiment, At a 5th embodiment, the noncontact type power supply means in a 1st embodiment is adopted by this embodiment to having supplied electric power to the accessories 20c by contact with each terminals 212, 213, and 214 by the side of apparatus, and each terminals 172, 173, and 174 by the side of vehicles. And electric power is supplied to the secondary coil 21a connected to 24 d of control circuits of the battery charger 24 from the primary side coil 17a connected to the power transmission side control circuit.

[0147]And the secondary coil 21a of this embodiment comprises several coils 21b, 21c, and 21d from which a number of turns differs, and each coils 21b, 21c, and 21d are connected to 24 d of control circuits, respectively.

[0148]Next, if the charging method to the charging equipment 25 by the battery charger 24 is explained, first, the battery charger 24 will measure the voltage of the charging equipment 25, and the voltage which should be charged with the measured voltage will be assumed. And the seal of approval of the appropriate voltage can be carried out to the rechargeable battery 25a by the coil which suits the assumed voltage being chosen by 24 d of control circuits.

[0149]When the above-mentioned measured voltage is about 0v and the rechargeable battery 25a is discharging fully, When 24 d of control circuits choose the coil of the lowest output voltage among the secondary coils 21b, 21c, and 21d and the charging current is set to zero within predetermined time, By changing into a coil with higher voltage and charging it, the seal of approval of the appropriate voltage can be carried out, without impressing voltage higher than appropriate voltage to the rechargeable battery 25a.

[0150]It enables it to specifically set up several kinds of charge voltages in the control circuit 24d by having a function which measures the voltage of the rechargeable battery 25a before charge, a function which measures charging current, and a circuit which chooses two or more secondary coils 21b, 21c, and 21d.

[0151]By the above, even if it is a case where the appropriate voltages of two or more accessories 20a and 20b differ, the electric power supply to these accessories 20a and 20b can be performed by one noncontact type power supply means, and the number of installation of the battery charger 24 in limited space called the vehicle interior of a room can be done in the minimum by extension.

[0152]in addition -- although the voltage to the rechargeable battery 25a is controlled by this embodiment by choosing several coils [from which winding differs / 21b, 21c, and 21d] either -- as the modification of this embodiment -- the rechargeable battery 25a -- it may be made to ******. What is necessary is just to specifically change switching frequency, a duty ratio, etc. suitably in 24 d of control circuits.

[0153]Although the noncontact type power supply means is adopted in this embodiment, if the charge voltages or current to the rechargeable battery 25a is made controllable, even if it is a case where the contact process power supply means by connection of the terminal illustrated by 5th embodiment is adopted, the same effect as this embodiment can be demonstrated.

[0154](A 7th embodiment) Drawing 15 (a) is a mimetic diagram showing the state where the accessories 20c were removed from the fitting part 12 in this embodiment, and (b) is a mimetic diagram showing the state where the accessories 20c were attached to the fitting part 12. And by this embodiment, the movable link member 60 is mechanically adopted as a fitting part side engaging member to having adopted the movable operation member 42 electrically as a fitting part side engaging member in a 5th embodiment.

[0155]Hereafter, if the details of this embodiment are explained based on drawing 15, the fitting part 12 of this embodiment will be formed in the hole shape caved-in from the design surface of the lid member 11, and the accessories 20c will be attached by inserting a part of these accessories 20c in the fitting part 12 of hole shape.

[0156]The accessories 20c are cylindrical shape, and, specifically, are formed in the shape where a part of the side was narrow. and the terminal 212 for apparatus side power sources annularly formed in this narrow portion centering on the cave-in direction of hole shape at the circumference of this axis -- 2 -- it has very much. On the other hand, the hole shape of the fitting part 12 is cylindrical shape prolonged in the perpendicular direction.

[0157]Although the design lid 30 of a 5th embodiment rotates and he is trying to open and close the opening 11b, he carries out parallel translation of the design lid 31 of this embodiment in said cave-in direction, and is trying to open and close the opening 11b. In this embodiment, it has the elastic member 32 under the design lid 31, and the design lid 31 is pushed up by the elastic member 32. And if the accessories 20c are caudad pushed from the upper part of the design lid 31, the design lid 31 will move caudad against the elastic force of the elastic member 32, and the opening 11b will be opened.

[0158]Here, the fitting part 12 is equipped with the link member 60, and this link member 60 is held rotatable at the axis of rotation 61. And if the accessories 20c are pushed further caudad, the lower end part of the accessories 20c will contact the lower end part 60a of the link member 60, and the link member 60 will be rotated in the position shown in drawing 15 (b). And the upper bed part 60b of the link member 60 engages with the vena-contracta portion of the accessories 20c by ******** by this rotation.

[0159]Therefore, it can prevent the accessories 20c escaping from the fitting part 12, and coming out also in the case where the case where vehicle vibration is large, and vehicles collide etc., by engagement in these link member 60 and accessories 20c.

[0160]Since the link member 60 is stuck with the release pin 62 and the rotation is locked when the link member 60 rotates in the position of drawing 15 (b), omission prevention of the accessories 20c can be ensured. And in removing the accessories 20c from the fitting part 12, it has pulled out the release pin 62 up. Then, the lock of said rotation is canceled and the accessories 20c are pushed up up by the elastic force of the elastic member 32 with the design lid 31. Then, the link member 60 will rotate, engagement will be canceled and the accessories 20c will be removed.

[0161]the terminal 172 for vehicles side power sources connected to the wire harness 18 for power supplies at the upper bed part 60b of the link member 60 -- 2 -- it has very much. And if the above-mentioned engagement is made, these terminals 172 for vehicles side power sources and the terminal 212 for apparatus side power sources will contact, and a flow will become possible.

[0162]Thus, since the fitting part side engaging member is realizable by the link member 60 which is a mechanical mechanism according to this embodiment, a cost cut can be aimed at compared with the case where the operation member 42 which is an electric mechanism realizes.

[0163](An 8th embodiment) Although the design lid 30 of a 5th embodiment is pressed down by the accessories 20c from the upper part, and moves to them caudad and this opens the opening 11b of the lid member 11, The design lid 32 of this embodiment is located above the accessories 20c, with the plinth 121 as a fitting part, it also covers the accessories 20c, moves up, and opens the opening 11b.

[0164]Below, the example of this embodiment shown in drawing 16 and drawing 17 is explained.

Drawing 16 is a perspective view showing the accessories 20c and the plinth 121 of this embodiment, and shows the state where attached the accessories 20c to the plinth 121, and the design lid 32 was opened. Drawing 17 is a front view showing the state where the design lid 32 was closed. The dashed dotted line in drawing 17 shows the position of the accessories 20c at the time of opening the design lid 32.

[0165]The accessories stowage 11d caudad caved-in from the opening 11b is formed in the lid member 11. And in this accessories stowage 11d, it has the plinth 121 as a fitting part in the sliding direction so that parallel translation is possible. The caudad caved-in hole 121a is formed in this plinth 121, and this hole 121a is exposed to the opening 11b empty vehicle interior of a room of the lid member 11 in the state where the design lid 32 was opened as shown in drawing 16.

[0166]And the accessories 20c are attached to the plinth 121 by inserting the accessories 20c in the hole 121a. The plinth 121 is equipped with the noncontact type power supply means which is not illustrated, and electric power is supplied to the accessories 20c by this means.

[0167]The design lid 32 is held rotatable in the direction of the arrow G in a figure at the lid member 11. And by physical means (not shown), such as a link mechanism, the design lid 32 and the plinth 121 are interlocked with the switching action of the design lid 32, and move to a sliding direction.

[0168]Therefore, if the opening 11b is shut to the direction shown in the arrow G with the design lid 30, it will move to the direction which the plinth 121 shows to the arrow H by a link mechanism, and the accessories 20c attached to the plinth 121 will be stored in the accessories stowage 11d. And if the opening 11b is thoroughly shut with the design lid 30, while the plinth 121 and the accessories 20c will be covered by the design lid 30, the design lid 30 forms the design surface of the lid member 11.

[0169]The accessories 20c can be kept to the vehicle interior of a room by this, without seeing from the outside of a car, and theft prevention of the accessories 20c can be aimed at. The fine sight of the lid member 11 of the instrument board 10 can be maintained with the design lid 30.

[0170]Here, the design lid 32 can be opened when fulfilling predetermined conditions, and thereby, it can operate the design lid 32 as an anti-theft means of the accessories 20c. When the antitheft devices, such as an immobilizer carried in vehicles, do not operate as an example of this predetermined condition, the case where the accessory switch of vehicles is in the state of OFF, the case where the ignition switch of vehicles is in the state of OFF, etc. are mentioned. Thereby more much more theft prevention can be aimed at.

[0171]It may be made for an alarm to sound when the design lid 32 is able to open in the state where predetermined conditions are not fulfilled. If it is made to stop the electric supply to the charging equipment 25 of the accessories 20c when the design lid 32 is closed, the power consumption at the time of accessories 20c intact can be prevented.

[0172](A 9th embodiment) Although the engaging members 42 and 60 are formed in the fitting part 12 side and the accessories 20c and the fitting part 12 are made to be engaged by these engaging members 42 and 60 in 5th and 7th embodiments, in this embodiment, the engaging member 80 is formed in the accessories 20c side.

[0173]Hereafter, if the details of this embodiment are explained based on drawing 18, the fitting part 12 of this embodiment will be formed in the hole shape caved-in from the design surface of the lid member 11, and the accessories 20c will be attached by inserting a part of these accessories 20c in the fitting part 12 of hole shape.

[0174]And the engaging member stowage 24f is established in two places of the casing 24a side of the accessories 20c. And in the stowage 24f, the electric appliance side engaging member 80 is stored via the elastic member 81. The notching 80a is formed in the portion which counters the opening 11b of the lid member 11 among the engaging members 80.

[0175]The design lid 31 is the same as the design lid 31 of a 7th embodiment, and he carries out parallel translation of it in said cave-in direction, and is trying to open and close the opening 11b. And if the

design lid 31 is pushed up by the elastic member 32 and the accessories 20c are caudad pushed from the upper part of the design lid 31, the design lid 31 will move caudad against the elastic force of the elastic member 32, and it will open the opening 11b.

[0176]And if the accessories 20c are pushed further caudad, the notching 80a of the engaging member 80 will be forced on the opening 11b of the lid member 11, and the engaging member 80 will be forced on the opening 11b by a **** lump and the elastic member 81. Thereby, the engaging member 80 engages with the lid member 11, and the accessories 20c can prevent escaping from and coming out of the fitting part 12.

[0177]In order to remove the accessories 20c from the fitting part 12, when a crew member pushes in the operating member 80 in the stowage 24f against the elastic force of the elastic member 81, said engagement can be canceled and the accessories 20c can be removed.

[0178]Here, the fitting part 12 is equipped with switch SW4, respectively so that it may correspond to each engaging member 80, and switch SW4 will be supplied by the portion located under the lid member 11 among the engaging members 80 if the accessories 20c are made engaged as mentioned above.

[0179]And electric power is supplied to the primary side coil 17a with which the fitting part 12 was equipped only after this switch SW4 is supplied, and in connection with this, electric power is supplied to the secondary coil 21a. Therefore, when the accessories 20c are not attached, the electric power supply to the primary side coil 17a is forbidden.

[0180]Since switch SW4 is not supplied even if it is a case where metal pieces, such as cans other than accessories 20c which has the operating member 80 (for example, can juice), are placed by the fitting part 12, the electric power supply to the primary side coil 17a is forbidden. Therefore, malfunction of the noncontact type power supply means 17a can be prevented.

[0181](A 10th embodiment) Drawing 19 is a front view of the accessories 20c concerning this embodiment, and the accessories 20c are equipped with the connector C1. And the secondary coil 21a is connected with the connector C1. On the other hand, the fitting part 12 is also equipped with the connector C2, and the primary side coil 17a is connected with this connector C2. And it fits in directly and these connectors C1 and C1 can be connected now, as shown in drawing 20.

[0182]By the way, there is a case where he would like to keep the accessories 20c attached to the fitting part 12 depending on the kind of accessories 20c, by a crew member's liking. In such a case, since according to this embodiment the primary side coil 17a and the secondary coil 21a can be made unnecessary as shown in drawing 20 at the fitting part 12 of such accessories 20c, a cost cut can be aimed at.

[0183]Even if it is a case where he would like to connect the accessories 20c which do not have the secondary coil 21a in the fitting part 12 which has the primary side coil 17a in checking the operation of the accessories 20c, Since according to this embodiment a connector joint can be carried out directly and the accessories 20c can be operated, without preparing the secondary coil 21a to the accessories 20c as shown in drawing 20, the operational check of the accessories 20c can be made easy.

[0184](An 11th embodiment) Drawing 21 is a front view of the accessories 20c concerning this embodiment, and has connected the primary side coil 17a with which the fitting part 12 was equipped, and the secondary coil 21a with which the accessories 20c were equipped with the extension cord unit 90. This extension cord unit 90 comprises the fitting part side coil 91, the cord reel 92, the extension cord 93, and the apparatus side coil 94.

[0185]The fitting part side coil 91 is a coil which receives supply of electric power from the primary side coil 17a by non-contact, and this power supply is transmitted to the apparatus side coil 94 via the extension cord 93. And the electric power transmitted to the secondary coil 21a from this apparatus side coil 94 is supplied by non-contact. The cord reel 92 rolls round the remaining length of the extension cord 93.

[0186]Thereby, according to this embodiment, in the above 1st - a 10th embodiment, they can be used to use of accessories 20c other than a position not having been completed, being able to operate the accessories 20c at the arbitrary places which the extension cord 93 reaches.

[0187](A 12th embodiment) Although the extension cord unit 90 is connected between the primary side coil 17a and the secondary coil 21a in an 11th embodiment, According to this embodiment, it prepared for the fitting part 12 and the extension cord unit 90 is connected to the primary side coil 17a between the connector C2 and the secondary coil 21a in which a connector joint is possible. Fitting part side coil 91 drawing 22 is a front view of the accessories 20c concerning this embodiment, in this embodiment, abolishes the fitting part side coil 91 of an 11th embodiment, and makes the cord reel 92 a structure connectable with the connector C2. The cord reel 92 is equipped with the connector C3 in which the primary side coil 17a and connection are possible.

[0188]Thereby, according to this embodiment, they can be used, being able to operate the accessories 20c at the arbitrary places which the extension cord 93 reaches. Since the primary side coil 17a is connected to the cord reel 92, the electric power supply of the accessories can be placed and carried out not only to arbitrary places but to the position of the original fitting part 12. Therefore, the increase in the amount of installed numbers of accessories is possible.

[0189](A 13th embodiment) According to this embodiment, the design lid 31 in a 9th embodiment, the elastic member 32, the engaging member 80, the elastic member 81, and switch SW4 are abolished. That is, it has simply structure which places the accessories 20c into the fitting part 12, and an electric power supply is carried out to the accessories 20c by no contacting with the primary side coil 17a with which the fitting part 12 was equipped, and the secondary coil 21 with which the accessories 20c were equipped.

[0190]Therefore, as are shown in the dashed dotted line of drawing 23, and shown in the solid line of not only the accessories 20c of the size corresponding to the size of the fitting part 12 but drawing 23, the accessories 20c of a size smaller than the size of the fitting part 12 can also be attached to the fitting part 12.

[0191]If an inclination is established in the bottom of the fitting part 12 as shown in drawing 24, when the accessories 20c are put on the fitting part 12, a position will shift automatically with prudence, and the accessories 20c will move so that the secondary coil 21 may become an optimal position which counters the primary side coil 17a. Thereby, attachment of the accessories 20c can be made still easier.

[0192](A 14th embodiment) Drawing 25 is a front view showing the accessories 20c and the fitting part 12 of this embodiment, and adjustment of it is attained as the angle of gradient of the primary side coil 17a shows the arrow I. In the case where this installs the accessories 20c of a size smaller than the inside diameter of the fitting part 12, Since the accessories 20c can be put against the fitting part 12, and it can be made to be able to fix and the primary side coil 17a can be made to incline so that it may counter horizontally to the secondary coil 21a, the transmission efficiency of transmission power can be raised.

[0193]If the holding part 12a which narrows in tapered shape is formed in the fitting part 12 as shown in drawing 26 and drawing 27, and it is made to make it put the accessories 20c against this holding part 12, the accessories 20c can be put by the taper part 12b, and it can be made to fix to it, and is suitable for it.

[0194](Other embodiments) In the above 1st - a 4th embodiment, although it has two or more fitting parts 12, the number of them may be one. It may be made to use power supplies other than the battery of vehicles by carrying a solar cell, a dry cell, a storage battery, etc. in accessories as a power supply means of accessories.

[0195]Although he is trying to make accessories fix to the fitting part 12 on Velcro 19 and 22 in the above 1st - a 3rd embodiment, An electromagnet functions simultaneously with attachment and it may be made for this invention to make accessories fix by equipping the fitting part 12 with an electromagnet coil, without being restricted to this. It may be made to make it fix by the mechanical coupling structure of common knowledge by the resin part which can be made to fix by one-touch.

[0196]Although it is an embodiment in case the indoor member 10 concerning this invention is an instrument board in the above 1st - a 14th embodiment, the indoor member 10 concerning this invention may not be restricted to an instrument board, and may be an indoor member etc. which are located in an armrest, a door, and a backseat, for example. It is suitable considering the design member of the car interior of a room as the indoor member 10.

[0197]Although the means of communication 13, 130, 171, and 173 of this invention are not indicated, he is trying to adopt suitably the means of communication 13, 130, 171, and 173 shown in the 1st - a 5th embodiment especially as the figure showing the above 6th - a 14th embodiment by the 6th - a 14th embodiment.